ABSTRACT OF THE DISCLOSURE

[057] Multiple channel multiplexing and demultiplexing systems and methods are provided for use in optical communication systems. In one embodiment, an optical multiplexer/demultiplexer system comprises an optical filter, a first optical isolator in optical communication with one side of the optical filter, a second optical isolator in optical communication with an opposite side of the optical filter, and a light disposer in optical communication with the first optical isolator. In another embodiment, an optical multiplexer/demultiplexer system comprises a first boundary filter, a first transitional optical filter in optical communication with the first boundary filter, a second boundary filter in optical communication with the first transitional optical filter, a second transitional optical filter in optical communication with the second boundary filter, and a third boundary filter in optical communication with the first transitional optical filter. Various optical filtering techniques are disclosed which utilize filters with shifted free spectral ranges, half-band filters, or boundary filtering. These filtering techniques can be used in both multiplexing and demultiplexing methods.

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